

Zpryme Smart Grid Insights Presents:

Smart Meter Uprising:

An industry brief spotlighting the burgeoning U.S. smart meter market from 2009 – 2011.

U.S. Smart Meters at a Glance

It's no wonder that smart meter rollouts have skyrocketed with supporting business case findings such as ComEd customers saving potentially \$2.8 billion on their electric bills over the 20-year life of the smart meters.¹ Largely due to the aggressive U.S. effort to modernize its electric grid, pros and cons (for example PG&E will now offer 'opt out option') for smart meters are still aggressively being debated; nonetheless the number of smart meters installed in the U.S. has ballooned over the past several years – with just over fifty utilities deploying the bulk of the investment.

The Institute for Electric Efficiency (IEE) recently issued the white paper, *"The Costs and Benefits of Smart Meters for Residential Customers"* (July 2011), which states that investments in smart meter systems make economic sense, and that the consumer-driven savings could be much greater: "We believe that by investing in and focusing on customer education and engagement most customers will migrate from passive engagement in energy management to much more active strategies," said Lisa Wood, executive director, IEE.²

Zpryme analyzed data from the U.S. Energy Information Administration (EIA) in an effort to not only breakdown smart meter deployments by utility, but also to zero-in on the drivers that will bridge the U.S. energy divide.

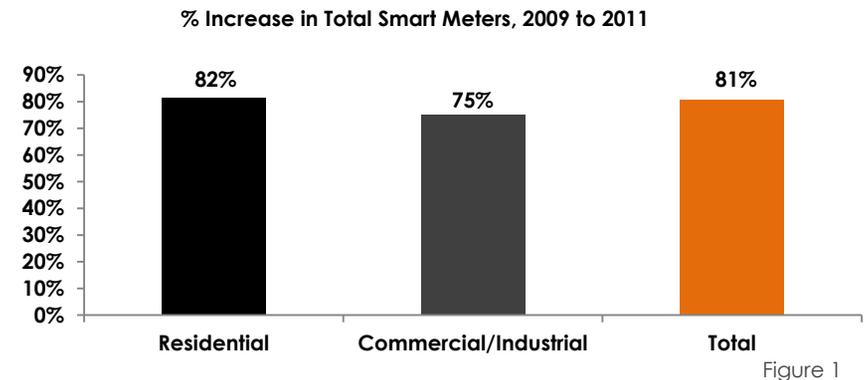
¹ Black & Veatch. The consultancy charged with evaluating the one-year smart meter pilot approved by the Illinois Commerce Commission (ICC).

² IEE. *The Costs and Benefits of Smart Meters for Residential Customers*, July 2011

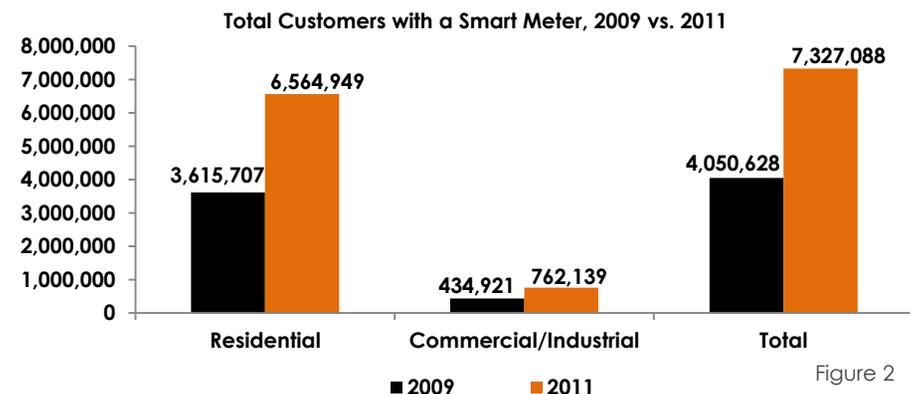
1 www.zpryme.com | www.smartgridresearch.org

Highlights³

- From 2009 to March of 2011, the number of smart meters installed among the group of 51 utilities grew by 81%.

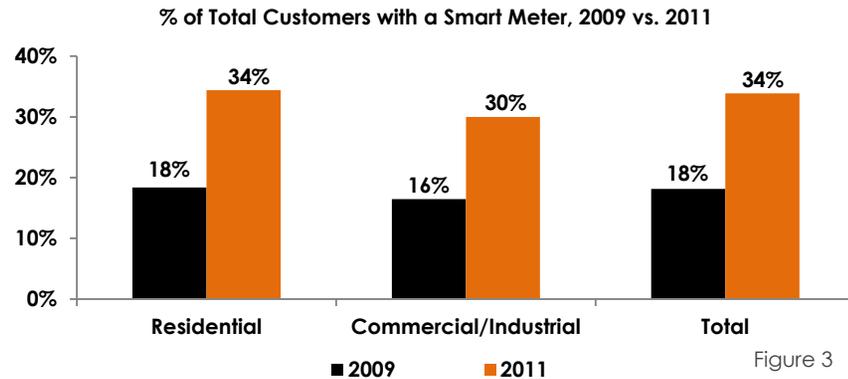


- From 2009 to March 2011, the group of 51 utilities grew their smart meter base from 4.0 million to 7.3 million.



³ (figures 1 – 3) For the 51 utilities in analysis who had data in the EIA 861 2009 file 8 and the EIA 826 2011 file. Note that data for 2011 is as of March 2011. See Table 1 and Table 2 for utility level data.

- In 2009, 18% of customers served by the 51 utilities had a smart meter. As of March 2011, this figure has increased to 34%.



Insights

- Despite poor economic conditions in the U.S., utilities will continue to deploy smart meters at a rapid pace in the near-term. However, the smart grid stimulus grants appear to be a key driver of the major smart meter deployments taking place in the U.S.
- The U.S. is on pace to meet the Obama Administration's goal of 40 million smart meters by 2015.
- The market for consumer facing energy management applications, software, and devices will enter a high-growth phase in 2012 as utilities seek to leverage the full benefits of the smart grid.

- Look for utilities that have deployed smart meters to more than 50% of their customer base to lead the market for products and technologies beyond AMI and smart meters.

Methodology

To conduct the analysis, Zpryme analyzed the Energy Information Administration's (EIA) Form EIA-826 Monthly Electric Utility Sales and Revenue Data from March of 2011, and Form EIA-861 (file 8), Annual Electric Power Industry Report, for calendar year 2009. Both data sets contain advanced metering infrastructure (AMI) meter data by utility. Utilities must report the number of AMI or smart meters by customer type on both forms. To be included in the analysis, the utility must have smart meter data in both the EIA-861 and EIA-826 file. There were 51 utilities that met such criteria, and thus were included in Zpryme's analysis.

- EIA-861 AMI Data: The EIA-861 data for calendar year 2009 reveal that 233 utilities had at least one or more smart meters installed. Further, the data show that a total of 9,611,401 smart meters were installed in 2009.
- EIA-826 Data: The EIA-826 data contains monthly smart meter data for January, February, and March of 2011. As of March 2011, the data reveal that 89 utilities have at least one or more smart meters installed. Among the 89 utilities, they have a combined total of 8,313,023 smart meters. It is important to note that as of March 2011, only a fraction of all U.S. utilities have been surveyed.

- As explained above, when the data were matched against each other, 51 utilities contained data in both the EIA-861 and EIA-826 files.
- Once the data on the 51 utilities for 2009 and 2011 were pulled from both files, the data was then analyzed to identify the increase or decrease in the number of smart meters from 2009 to 2011 (March) for each utility, and for the group as whole. The 51 utilities are listed in table 1 and table 2 of this report.

Key Findings (51 Utilities Analyzed)

- In 2009, the group of 51 utilities served a total of 22.3 million customers. As of March 2011, the same utilities served 21.6 million customers.
- In 2009, the group of 51 utilities had just over 4.0 million smart meters. Residential smart meters totaled 3.6 million while commercial and industrial meters totaled 434,921 in 2009. Eighteen percent of all customers served by the 51 utilities had a smart meter (18% of residential customers and 16% of commercial/industrial customers).
- As of March 2011, the group of 51 utilities had 7.3 million smart meters. Residential smart meters totaled 6.6 million while commercial and industrial meters totaled 762,139 in 2011. Thirty-four percent of all customers served by the 51

utilities had a smart meter (34% of residential customers and 30% of commercial/industrial customers).

- From 2009 to March of 2011, smart meters among the group of 51 utilities grew by 81% (addition of 3.3 million meters). During this time period, the number of residential meters grew by 82% while commercial and industrial meters grew by 75%.

Utility Spotlight: OG&E

- The \$366 million smart meter project began with pilots in northwest Oklahoma City and Norman and has now expanded its footprint to the southern region of OG&E's territory, as well as Moore and parts of Oklahoma City.
- OG&E has installed approximately 350,000 smart meters since February of 2010.
- OG&E projects to install smart meters for nearly 800,000 customers by the close of 2012.⁴

Among the 51 utilities, the top 5 utilities by the number of smart meters installed as of March 2011 were Georgia Power Co (Georgia), PPL Electric (Pennsylvania), Portland General Electric (Oregon), Salt River Project (Arizona), and Wisconsin Power & Light (Wisconsin). As of March 2011, these 5 utilities had 1.7 million, 1.4 million, 0.8 million, 0.6 million, and 0.4 million smart meters, respectively.

⁴ Jay F. Marks. The Oklahoman, OG&E will expand smart grid program to Midwest City, Del City. August 18, 2011

Breakdown of U.S. Utilities (by Utility and Customer Type)

Table 1. Total Smart Meters by Utility, 2009 vs. 2011*

Utility	State	2009		2011		Net change in Smart Meters from 2009 to 2011	% change in Smart Meters from 2009 to 2011
		Total	% of All Customers	Total	% of All Customers		
Georgia Power Co	GA	992,975	42%	1,738,750	74%	745,775	75%
PPL Electric Utilities Corp	PA	1,397,689	100%	1,404,023	100%	6,334	0%
Portland General Electric Co	OR	133,237	16%	820,960	100%	687,723	516%
Salt River Project	AZ	909	0%	643,248	68%	642,339	70664%
Wisconsin Power & Light Co	WI	314,018	69%	417,043	91%	103,025	33%
Idaho Power Co	ID	202,937	43%	362,942	77%	160,005	79%
Oklahoma Gas & Electric Co	OK	6,426	1%	260,597	36%	254,171	3955%
Detroit Edison Co	MI	19,137	1%	210,566	10%	191,429	1000%
Duke Energy Ohio Inc	OH	55,124	8%	157,140	31%	102,016	185%
Sacramento Municipal Util Dist	CA	13,050	2%	154,499	26%	141,449	1084%
Jackson Electric Member Corp	GA	53,515	26%	140,413	68%	86,898	162%
Modesto Irrigation District	CA	102,274	92%	113,271	100%	10,997	11%
Virginia Electric & Power Co	VA	62,583	3%	100,284	4%	37,701	60%
Black Hills/Colorado Elec.Util	CO	55,886	60%	92,481	99%	36,595	65%
Brunswick Electric Member Corp	NC	81,277	100%	82,427	100%	1,150	1%
Unitil Energy Systems	NH	76,085	100%	72,713	99%	-3,372	-4%
Palmetto Electric Coop Inc	SC	66,684	100%	67,499	100%	815	1%
Rutherford Elec Member Corp	NC	66,738	100%	66,994	100%	256	0%
Southern Pine Elec Power Assn	MS	9,465	15%	54,083	83%	44,618	471%
Arkansas Valley Elec Coop Corp	AR	52,296	100%	52,907	100%	611	1%
Oklahoma Electric Coop Inc	OK	47,984	100%	48,969	100%	985	2%
Duke Energy Kentucky	KY	38,775	29%	37,628	28%	-1,147	-3%
Trico Electric Cooperative Inc	AZ	33,129	84%	34,588	87%	1,459	4%
Fitchburg Gas & Elec Light Co	MA	28,473	102%	28,938	100%	465	2%
Public Service Co of Colorado	CO	22,313	2%	23,883	2%	1,570	7%
Kootenai Electric Cooperative	ID	22,537	100%	23,193	100%	656	3%
Idaho Power Co	OR	7	0%	17,114	93%	17,107	244386%
Cass County Elec Coop Inc	ND	13,537	39%	15,873	45%	2,336	17%
West River Electric Assn Inc	SD	14,889	100%	15,497	100%	608	4%
Entergy Gulf States - LA LLC	LA	11,761	3%	12,365	3%	604	5%

Table 1. Continued: Total Smart Meters by Utility, 2009 vs. 2011*

Utility	State	2009		2011		Net change in Smart Meters from 2009 to 2011	% change in Smart Meters from 2009 to 2011
		Total	% of All Customers	Total	% of All Customers		
Verendrye Electric Coop Inc	ND	11,516	100%	12,312	100%	796	7%
Hawaiian Electric Co Inc	HI	8,713	3%	9,175	3%	462	5%
Minnesota Power Inc	MN	608	0%	5,661	4%	5,053	831%
Puget Sound Energy Inc	WA	146	0%	4,692	0%	4,546	3114%
City of Kansas City	KS	4,266	7%	4,555	7%	289	7%
Arkansas Valley Elec Coop Corp	OK	4,423	100%	4,462	100%	39	1%
Poudre Valley R E A, Inc	CO	448	1%	3,894	11%	3,446	769%
Sioux Valley SW Elec Coop	MN	440	15%	3,796	100%	3,356	763%
Ketchikan Public Utilities	AK	3,106	42%	3,264	44%	158	5%
City of Tacoma	WA	15,311	9%	1,275	1%	-14,036	-92%
San Luis Valley R E C, Inc	CO	683	6%	1,018	8%	335	49%
Baltimore Gas & Electric Co	MD	752	0%	736	0%	-16	-2%
South Carolina Electric & Gas Co	SC	517	0%	522	0%	5	1%
Entergy Louisiana Inc	LA	260	0%	232	0%	-28	-11%
Niagara Mohawk Power Corp.	NY	3,003	0%	229	0%	-2,774	-92%
Entergy Arkansas Inc	AR	42	0%	152	0%	110	262%
Kootenai Electric Cooperative	WA	83	100%	90	100%	7	8%
Grand River Dam Authority	OK	84	100%	79	100%	-5	-6%
South Carolina Pub Serv Auth	SC	30	0%	36	0%	6	20%
City of Fort Collins City	CO	479	1%	16	0%	-463	-97%
Flathead Electric Coop Inc	MT	8	0%	4	0%	-4	-50%
Total (all 51 utilities)		4,050,628	18%	7,327,088	34%	3,276,460	81%

Table 2. Smart Meters by Utility and Customer Type, 2009 and 2011*

Utility	State	2009					2011				
		Residential	Commercial	Industrial	Transportation	Total	Residential	Commercial	Industrial	Transportation	Total
Georgia Power Co	GA	899,923	93,052	0	0	992,975	1,583,035	155,715	0	0	1,738,750
PPL Electric Utilities Corp	PA	1,221,548	171,699	4,441	1	1,397,689	1,225,969	173,627	4,426	1	1,404,023
Portland General Electric Co	OR	125,385	7,483	369	0	133,237	719,734	99,316	1,876	34	820,960
Salt River Project	AZ	0	887	22	0	909	597,736	44,716	796	0	643,248
Wisconsin Power & Light Co	WI	279,572	34,446	0	0	314,018	370,096	46,947	0	0	417,043
Idaho Power Co	ID	184,131	18,669	137	0	202,937	313,313	40,283	9,346	0	362,942
Oklahoma Gas & Electric Co	OK	6,148	278	0	0	6,426	234,071	25,721	805	0	260,597
Detroit Edison Co	MI	17,960	1,177	0	0	19,137	199,353	11,213	0	0	210,566
Duke Energy Ohio Inc	OH	51,862	3,262	0	0	55,124	155,089	2,051	0	0	157,140
Sacramento Municipal Util Dist	CA	13,050	0	0	0	13,050	140,822	10,683	2,954	40	154,499
Jackson Electric Member Corp	GA	50,731	2,780	4	0	53,515	131,816	8,539	58	0	140,413
Modesto Irrigation District	CA	89,628	12,636	10	0	102,274	93,698	19,416	157	0	113,271
Virginia Electric & Power Co	VA	46,548	16,018	17	0	62,583	80,293	19,977	14	0	100,284
Black Hills/Colorado Elec.Util	CO	50,037	5,849	0	0	55,886	80,685	11,739	57	0	92,481
Brunswick Electric Member Corp	NC	78,964	2,313	0	0	81,277	79,939	2,488	0	0	82,427
Unitil Energy Systems	NH	63,625	12,309	151	0	76,085	61,884	10,679	150	0	72,713
Palmetto Electric Coop Inc	SC	56,713	9,958	13	0	66,684	57,863	9,622	14	0	67,499
Rutherford Elec Member Corp	NC	62,487	4,217	34	0	66,738	62,089	4,869	36	0	66,994
Southern Pine Elec Power Assn	MS	9,465	0	0	0	9,465	50,317	3,722	44	0	54,083
Arkansas Valley Elec Coop Corp	AR	48,803	3,480	13	0	52,296	49,395	3,497	15	0	52,907
Oklahoma Electric Coop Inc	OK	44,142	3,842	0	0	47,984	44,859	4,056	54	0	48,969
Duke Energy Kentucky	KY	36,660	2,115	0	0	38,775	35,871	1,757	0	0	37,628
Trico Electric Cooperative Inc	AZ	31,212	1,873	44	0	33,129	32,802	1,768	18	0	34,588
Fitchburg Gas & Elec Light Co	MA	24,296	4,145	32	0	28,473	24,638	4,271	29	0	28,938
Public Service Co of Colorado	CO	18,318	3,839	156	0	22,313	20,657	3,110	116	0	23,883
Kootenai Electric Cooperative	ID	20,513	1,976	48	0	22,537	21,102	2,046	45	0	23,193
Idaho Power Co	OR	0	0	7	0	7	12,763	3,012	1,339	0	17,114
Cass County Elec Coop Inc	ND	12,529	1,008	0	0	13,537	14,581	1,283	9	0	15,873
West River Electric Assn Inc	SD	13,267	1,613	9	0	14,889	13,849	1,640	8	0	15,497
Entergy Gulf States - LA LLC	LA	11,141	617	3	0	11,761	11,774	588	3	0	12,365
Verendrye Electric Coop Inc	ND	10,056	1,398	62	0	11,516	10,778	1,470	64	0	12,312
Hawaiian Electric Co Inc	HI	7,727	986	0	0	8,713	8,006	1,169	0	0	9,175
Minnesota Power Inc	MN	422	138	48	0	608	4,915	680	66	0	5,661
Puget Sound Energy Inc	WA	0	77	69	0	146	158	4,286	248	0	4,692
City of Kansas	KS	4,082	184	0	0	4,266	3,668	880	7	0	4,555

Table 2. Continued: **Smart Meters by Utility and Customer Type, 2009 and 2011***

Utility	State	2009					2011				
		Residential	Commercial	Industrial	Transportation	Total	Residential	Commercial	Industrial	Transportation	Total
Arkansas Valley Elec Coop Corp	OK	3,937	486	0	0	4,423	3,995	467	0	0	4,462
Poudre Valley R E A, Inc	CO	441	6	1	0	448	3,876	18	0	0	3,894
Sioux Valley SW Elec Coop	MN	370	40	30	0	440	3,542	172	82	0	3,796
Ketchikan Public Utilities	AK	3,083	23	0	0	3,106	2,997	265	2	0	3,264
City of Tacoma	WA	15,311	0	0	0	15,311	1,275	0	0	0	1,275
San Luis Valley R E C, Inc	CO	327	72	284	0	683	628	86	304	0	1,018
Baltimore Gas & Electric Co	MD	728	24	0	0	752	736	0	0	0	736
South Carolina Electric & Gas Co	SC	0	247	270	0	517	0	258	264	0	522
Entergy Louisiana Inc	LA	201	58	1	0	260	171	60	1	0	232
Niagara Mohawk Power Corp.	NY	284	1,039	1,680	0	3,003	24	76	129	0	229
Entergy Arkansas Inc	AR	0	0	42	0	42	0	0	152	0	152
Kootenai Electric Cooperative	WA	80	2	1	0	83	87	2	1	0	90
Grand River Dam Authority	OK	0	54	30	0	84	0	50	29	0	79
South Carolina Pub Serv Auth	SC	0	0	30	0	30	0	0	36	0	36
City of Fort Collins	CO	0	464	15	0	479	0	0	16	0	16
Flathead Electric Coop Inc	MT	0	8	0	0	8	0	4	0	0	4
Total (all 51 utilities)		3,615,707	426,847	8,073	1	4,050,628	6,564,949	738,294	23,770	75	7,327,088

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